

Testimony of

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Before the

House Committee on Science and Technology  
Subcommittee on Technology and Innovation

On

Tuesday, March 31, 2009

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Chairman Wu, Members of the Subcommittee:

**The Portland Story: Climate and Transportation**

Thank you Congressman Wu and members of the Committee on Science and Technology, for the opportunity to provide input on this important topic. The testimony I am providing today was developed by City of Portland transportation staff in conjunction with Portland State University, the Oregon Transportation and Education Consortium (OTREC), TriMet, and Metro (our regional MPO). These comments are consistent with the regional reauthorization position paper adopted by JPACT (the Portland-area MPO board) and the Metro Regional Council.

In the Portland region, we benefit from high-quality decision-making based on the integration of land use and transportation planning backed by data and research. For over 30 years, the region has pursued a path different from most urban areas of the United States. In the 1970's, we began to direct resources into a multi-modal transportation system rather than investing in a longstanding freeway expansion project. Coupled with the state's establishment of an urban growth boundary, this landmark decision laid the groundwork for three decades of transportation and land use innovation that has positioned the city well to meet the coming challenges posed by climate change...

Twenty years later, in 1993, the City of Portland was the first city in the nation to adopt a comprehensive climate strategy that included an aggressive transportation agenda. As a result of that strategy (and high bike ridership and strong commitment to transit), Portland's per capita emissions have dropped to 10% below 1990 levels. During that same period, greenhouse gas emissions throughout the country have increase by 17%.

Between 1996 and 2006, transit ridership in the Portland Metro region increased by 46 percent, while our population increased by 16 percent. At the same time, daily vehicle miles traveled (DVMT) per capita in the Portland region declined by 8 percent, while the average length of a work trip decreased 33 percent. In contrast, national DVMT per capita rose by 8 percent over the same period.

This progress is not accidental. It is the result of many years of planning for compact growth, investing in high quality transportation options and adopting climate-friendly policies rooted in quality research and modeling supported by data.

## **Challenges**

Today in Portland, transportation accounts for 40% of our greenhouse gas emissions. As we began to update our Climate Action Plan (scheduled to be adopted in June 2009), it became evident that transportation must be a centerpiece of our strategy if we are to achieve the climate goals established in our region. The draft plan includes aggressive transportation targets and calls for reporting of greenhouse gas emissions on all transportation projects.

Despite our successes to date, the next steps are challenging. First, projections show that, even with rapid introduction of electric vehicles and alternative fuels, we must reduce vehicle miles traveled by 68% per person to achieve our 2050 climate goal of reducing overall greenhouse gas emissions by 80%. Vehicle technology and fuels can help, but are insufficient to make real reductions in emissions and meet Oregon and Portland's climate goals.

Portland's challenge, and the nation's, is to research, develop and implement new tools to help us make real change in our climate impacts. As of today, we lack the data, the models and the decision-making tools to get us there. What we do have is a clear idea what strategies and actions we need to succeed.

The window for effective climate action is closing quickly – many scientists believe that we must significantly reduce emissions in the next five and ten years in order to avoid major and irreversible climatic changes.

To have a realistic chance of achieving an 80% reduction by 2050 we must prioritize short-term “early wins,” the quick-to-implement strategies that will pay forty years of dividends starting in 2010, 2011 and 2012. We must close the major gaps in data collection, travel modeling and decision-making that inhibit our ability to plan and select climate-friendly transportation projects, policies and plans.

Thus, we ask you to support two parallel and interconnected tracks in the climate and transportation research agenda:

First, transportation planners and engineers need data, models and decision tools to evaluate demand management and system management strategies. Demand management and system management are two highly cost-effective “implementation-ready” strategies, which can be implemented today to begin reducing emissions immediately and on a significant scale.

Second, we need significantly better travel data collection and modeling tools to improve capital project development and system plan evaluation. Implementation of the “Travel Data and Modeling Recommendations to Support Climate Policy and Performance-Based Transportation Policy” presented by Mr. Winkelman would substantially address our concerns in this regard.

## **Solutions**

Because of the need to act quickly and wisely, we encourage you to prioritize research on quick-to-implement strategies such as Transportation Demand Management (TDM) and Transportation System Management (TSM).

As it stands today, some of the most effective climate change strategies are relatively easy and inexpensive to implement but do not always rise to the top of community needs based on modeling and decision-making practices. Best practices for demand and system management strategies include tools that allow road users to access real time information about traffic conditions and ridesharing. In addition, targeted marketing campaigns

have shown dramatic increases in transit and bicycle use. Research showing the effectiveness of these tools will lead communities to prioritize and invest in them. In turn, the programs will allow users to make travel choices that have a significant impact on congestion.

Additionally, managing corridors based on established performance goals is a key strategy to reduce congestion and emissions. To do this effectively will require quality data and research. Planners need data on vehicle miles traveled, mode choice, and trip patterns to make informed decisions about projects and programs related to climate change.

History has shown that research, methods, practices, and tools are a key element of major paradigm shifts in the field of transportation. Focusing the current reauthorization of the transportation act on climate change and “greening” our transportation system is one such shift. By comparison, the National Defense Highway System Act (which initiated construction of the interstate highway system in the late ‘50’s and ‘60’s) was accompanied by significant research on safety, highway geometrics, metropolitan planning and other areas that had not previously been contemplated.

Similarly, ISTEA, adopted in 1991, included flexible funding categories, air quality conformity, an emphasis on freight and inter-modal facilities, a new emphasis on system performance, and other innovative elements to advance transportation in the US. Research and technology advances around these topics were widespread in the 90’s, helping to forge productive partnerships between the federal government, universities, states, MPO’s, Ports, transit districts, and private enterprise.

The “Green TEA” or Green Reauthorization can set us on a path toward a transportation system that is sustainable, reduces our emissions and builds a system for the future. The treatment of climate change in this reauthorization promises significant advances in research and knowledge that will result in real change.

Throughout the transportation field, models are key to enabling decisions for policies and programs/funding. Locally, we have attempted to model greenhouse gas emissions at the project level. While the experience was enlightening, it became evident that we lack sufficient data (in terms of trip lengths, VMT, mode choice) and modeling capacity to predict accurately the climate impacts of specific projects.

If we are to measure innovative programs and policies, new model enhancements are required to address the increased technical demands imposed by the rigor of environmental analysis. Improvements are needed for measuring:

1. Emissions
  - The EPA MOVES model was developed for the purposes of quantifying the green house gases from mobile sources. Improvements are needed in this tool to address more easily different vehicle types (hybrids, electric) and fuels (biodiesel, ethanol).
2. VMT and congestion
  - Improving data and capacity for “Tour Models” will lead to better modeling of trip chaining and time of day decisions as a response to congestion. It will also improve our ability to model responses to pricing mechanisms.
3. • Dynamic traffic assignment – This assignment technique better captures queuing and upstream route choice effects due to bottlenecks. Overall, it provides better measurement of congestion effects.
4. • Land use allocation models - These models lead to better sensitivity to induced demand related to transportation investments.

5. Non-motorized travel (walk and bike)
  - Focus on tools that are better equipped spatially to address the acuity required for non-motorized modal decisions.
6. Vehicle choice
  - Need to develop tools to emulate the choice of purchasing a new vehicle, what kind, and which vehicle is used for a particular trip.
7. Commercial traffic and goods movement
  - This component of travel is a major contributor to the environmental health of the region. Tools to address their travel patterns need improvement if we are to achieve our goals.

## **Conclusion**

The Portland region has achieved considerable success in limiting emissions growth from transportation:

Transit ridership has doubled since 1990, with increases every year and exponentially with the cost of gas.

Portland has a higher percentage of bicycle commuters than any other major U.S. city with a bicycle commute rate of 8-12%; eight times the national average.

Portland adopted a renewable fuel standard requiring that all diesel sold in the city include at least five percent bio-diesel and all gasoline 10 percent ethanol.

Nevertheless, transportation of goods and people continues to account for 40 percent of Multnomah County greenhouse gas emissions. Land use planning and transportation funding decisions greatly influence transportation-related greenhouse gas emissions. Decision makers need quality data to inform decisions about how and where to spend public dollars to build and manage a transportation system that works towards our climate goals.

Our Metropolitan Planning Organization, at the direction of our policy committee on transportation, recently adopted Resolution 09-0416 which outlines the region's position on the transportation re-authorization. Support for a robust research agenda tied to climate change is among the key recommendations of that resolution and we encourage you to pursue avenues that foster an environment of learning and collaboration among jurisdictions. We consider it a sign of the times that Congress chose Oregon for a national University Transportation Center (OTREC), whose theme is sustainable transportation and whose success stems from partnership among four universities and collaborations with public agencies around the state.

A commitment to regional planning rooted in quality research and data has paid dividends for the Portland region over the past forty years, and the nation has benefited from our experience in addressing climate change through an integrated approach to land use and transportation planning. Looking toward the reauthorization of the transportation bill, we look forward to continued partnership with the federal government. Portland is committed to being a leader in climate change and clean technologies; a transportation bill with a robust research agenda that provides us with the data and decision-making tools will ensure an outcome that benefits both our region and the country. Thank you for the invitation to speak before you and your partnership in addressing the impact transportation has on our environment.